



RECEIVED
DEC 6 2002
ATTORNEY DOCKET NO. 00786/389062 2002
TECH CENTER 1600/2900

Certificate of Mailing: Date of Deposit: December 20, 2002

I hereby certify under 37 C.F.R. § 1.8(a) that this correspondence is being deposited with the United States Postal Service as **first class mail** with sufficient postage on the date indicated above and is addressed to the Commissioner for Patents, Washington, D.C. 20231.

Elaine Fabrizio

Printed name of person mailing correspondence

Elaine Fabrizio

Signature of person mailing correspondence

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Jen Sheen	Art Unit:	1638
Serial No.:	09/848,806	Examiner:	Cynthia E. Collins
Filed:	May 4, 2001	Customer No.:	21559
Title:	CALCIUM DEPENDENT PROTEIN KINASE POLYPEPTIDES AS REGULATORS OF PLANT DISEASE RESISTANCE		

Commissioner for Patents
Washington, DC 20231

INFORMATION DISCLOSURE STATEMENT

Applicant submits the references listed on the attached form PTO-1449, copies of which are enclosed.

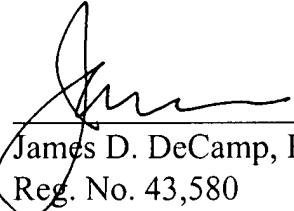
Submission of this statement is not a representation that a search has been made, nor is information included in this statement an admission that the information is material to patentability.

This statement is being filed before the receipt of a first Office Action on the merits.

If there are any charges or any credits, please apply them to Deposit Account No.
03-2095.

Respectfully submitted,

Date: 20 December 2002



James D. DeCamp, Ph.D.
Reg. No. 43,580

Clark & Elbing LLP
101 Federal Street
Boston, MA 02110
Telephone: 617-428-0200
Facsimile: 617-428-7045



21559
PATENT TRADEMARK OFFICE

RECEIVED

DEC 31 2002

TECH CENTER 1600/2900

Sheet 1 of 11

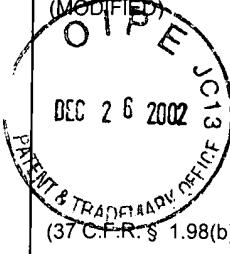
SUBSTITUTE FORM PTO-1449 (MODIFIED)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		Attorney Docket No.	00786/389002	
		INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)		Serial No.	09/848,806	
		(37 C.F.R. § 1.98(b))		Applicant	Jen Sheen	
				Filing Date	May 4, 2001	
				Group	1638	
				IDS Filed	December 20, 2002	
U.S. PATENTS						
Examiner's Initials	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date (If Appropriate)
	5,527,695	Jun. 18, 1996	Hodges et al.			
	5,658,772	Aug. 19, 1997	Odell et al.			
	5,723,765	Mar. 3, 1998	Oliver et al.			
	5,648,599	Jul. 15, 1997	Tanksley et al.			
FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION						
Examiner's Initials	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation (Yes/No)
	WO 95/05731 A1	Mar. 2, 1995	WIPO			
	WO 98/26045 A1	Jun. 18, 1998	WIPO			
	WO 99/02655 A1	Jan. 21, 1999	WIPO			
	WO 00/09724 A1	Feb. 24, 2000	WIPO			
	WO 01/68920 A1	Sept. 20, 2001	WIPO			
	WO 01/84911 A1	Nov. 15, 2001	WIPO			
OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PLACE OF PUBLICATION)						
	Abel and Theologis, "Transient Transformation of Arabidopsis Leaf Protoplasts: A Versatile Experimental System to Study Gene Expression," <i>The Plant Journal</i> 5:421-427 (1994).					
	Banno et al., "NPK1, a Tobacco Gene that Encodes a Protein with a Domain Homologous to Yeast BCK1, STE11, and Byr2 Protein Kinases," <i>Mol. Cell. Biol.</i> 13:4745-4752 (1993).					
	Banzet et al., "Accumulation of Small Heat Shock Proteins, Including Mitochondrial HSP22, Induced by Oxidative Stress and Adaptive Response in Tomato Cells," <i>The Plant Journal</i> 13:519-527 (1998).					
	Bellincampi et al., "Oligogalacturonides Prevent Rhizogenesis in <i>rolB</i> -Transformed Tobacco Explants by Inhibiting Auxin-Induced Expression of the <i>rolB</i> Gene," <i>The Plant Cell</i> 8:477-487 (1996).					
	Bennett and Tonks, "Regulation of Distinct Stages of Skeletal Muscle Differentiation by Mitogen-Activated Protein Kinases," <i>Science</i> 278:1288-1291 (1997).					
	Bögrie et al., "Wounding Induces the Rapid and Transient Activation of a Specific MAP Kinase Pathway," <i>The Plant Cell</i> 9:75-83 (1997).					
	Bohnert and Jensen, "Strategies for Engineering Water-Stress Tolerance in Plants," <i>TIBTECH</i> 14:89-97 (1996).					
	Bohnert et al., "Adaptations to Environmental Stresses," <i>The Plant Cell</i> 7:1099-1111 (1995).					
	Bolwell and Wojtaszek, "Mechanisms for the Generation of Reactive Oxygen Species in Plant Defence - a Broad Perspective," <i>Physiological and Molecular Plant Pathology</i> 51:347-366 (1997).					
	Bray, "Molecular Responses to Water Deficit," <i>Plant Physiol.</i> 103:1035-1040 (1993).					
	Bray, "Plant Responses to Water Deficit," <i>Trends in Plant Science</i> 2:48-54 (1997).					
EXAMINER			DATE CONSIDERED			
EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with the next communication to applicant.						

RECEIVED

DEC 31 2002

TECH CENTER 1600/2900

Sheet 2 of 11

SUBSTITUTE FORM PTO-1449 (MODIFIED)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		Attorney Docket No.	00786/389002		
 (37 C.F.R. § 1.98(b))		INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)		Serial No.	09/848,806		
				Applicant	Jen Sheen		
		Filing Date	May 4, 2001				
		Group	1638				
		IDS Filed	December 20, 2002				
U.S. PATENTS							
Examiner's Initials	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date (If Appropriate)	
FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION							
Examiner's Initials	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation (Yes/No)	
OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PLACE OF PUBLICATION)							
Chamnongpol et al., "Defense Activation and Enhanced Pathogen Tolerance Induced by H ₂ O ₂ in Transgenic Tobacco," <i>Proc. Natl. Acad. Sci. USA</i> 95:5818-5823 (1998).							
Cheikh and Jones, "Disruption of Maize Kernel Growth and Development by Heat Stress, Role of Cytokinin/Abscisic Acid Balance" <i>Plant Physiol.</i> 106:45-51 (1994).							
Chen et al., "The Promoter of a H ₂ O ₂ -Inducible, Arabidopsis Glutathione S-Transferase Gene Contains Closely Linked OBF- and OBP1-Binding Sites," <i>The Plant Journal</i> 10:955-966 (1996).							
Clark et al., "Association of the Arabidopsis CTR1 Raf-Like Kinase with the ETR1 and ERS Ethylene Receptors," <i>Proc. Natl. Acad. Sci. USA</i> 95:5401-5406 (1998).							
Clarke, "Switching off MAP Kinases," <i>Current Biology</i> 4:647-650 (1994).							
Coenen and Lomax, "Auxin-Cytokinin Interactions in Higher Plants: Old Problems and New Tools," <i>Trends in Plant Science</i> 2:351-356 (1997).							
Damm et al., "Efficient Transformation of <i>Arabidopsis thaliana</i> Using Direct Gene Transfer to Protoplasts," <i>Mol. Gen. Genet.</i> 217:6-12 (1989).							
Datla et al., "Plant Promoters for Transgene Expression," <i>Biotechnology Annual Review</i> 3:269-296 (1997).							
Daugherty et al., Chapter 29: Environmental Stress and Gene Regulation, In <i>Arabidopsis</i> , Cold Spring Harbor Laboratory Press pp. 769-804 (1994).							
Deak et al., "Fas-Induced Proteolytic Activation and Intracellular Redistribution of the Stress-Signaling Kinase MEKK1," <i>Proc. Natl. Acad. Sci. USA</i> 95:5595-5600 (1998).							
Doi et al., "MSG5, a Novel Protein Phosphatase Promotes Adaptation to Pheromone Response in <i>S. cerevisiae</i> ," <i>The EMBO Journal</i> 13:61-70 (1994).							
Estruch et al., "Cloning and Characterization of a Maize Pollen-Specific Calcium-Dependent Calmodulin-Independent Protein Kinase," <i>Proc. Natl. Acad. Sci. USA</i> 91:8837-8841 (1994).							
Felix et al., "Rapid Changes of Protein Phosphorylation Are Involved in Transduction of the Elicitor Signal in Plant Cells," <i>Proc. Natl. Acad. Sci. USA</i> 88:8831-8834 (1991).							
Flavell et al., "Instability of Transgenes in Plants and its Implications for Plant Breeding," Proceedings of an International Symposium on the Use of Induced Mutations and Molecular Techniques for Crop Improvement Jointly Organized by the International Atomic Energy Agency and the Food and Agriculture Organization of the United Nations, pp. 13-22, June 19-23 (1995).							
Francis and Halford, "The Plant Cell Cycle," <i>Physiologia Plantarum</i> 93:365-374 (1995).							
Garbers and Simmons, "Approaches to Understanding Auxin Action," <i>Trends in Cell Biology</i> 4:245-250 (1994).							
EXAMINER				DATE CONSIDERED			

EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with the next communication to applicant.

RECEIVED

<p>SUBSTITUTE FORM PTO-1449 (MODIFIED)</p> <p>DEC 26 2002 JC13 INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)</p> <p>(37 C.F.R. § 1.98(b))</p>				Attorney Docket No. 00786/389002	Serial No. 09/848,806	Applicant Jen Sheen	Filing Date May 4, 2001
				Group 1638	IDS Filed December 20, 2002		DEC 31 2002 TECH CENTER 1600/2900
U.S. PATENTS							
Examiner's Initials	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date (If Appropriate)	
FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION							
Examiner's Initials	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation (Yes/No)	
OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PLACE OF PUBLICATION)							
	GenBank Accession No. U31752						
	GenBank Accession No. D21806						
	Gordon-Kamm et al., "Transformation of Maize Cells and Regeneration of Fertile Transgenic Plants," <i>The Plant Cell</i> 2:603-618 (1990).						
	Gray et al., "A Role for the Pkc1 MAP Kinase Pathway of <i>Saccharomyces cerevisiae</i> in Bud Emergence and Identification of a Putative Upstream Regulator," <i>EMBO J.</i> 16:4924-4937 (1997).						
	Green and Fluhr, "UV-B-Induced PR-1 Accumulation Is Mediated by Active Oxygen Species," <i>The Plant Cell</i> 7:203-212 (1995).						
	Guilfoyle, "Aux/IAA Proteins and Auxin Signal Transduction," <i>Trends in Plant Science</i> 3:205-207 (1998).						
	Gupta et al., "Identification of a Dual-Specificity Protein Phosphatase that Inactivates a MAP Kinase from <i>Arabidopsis</i> ," <i>The Plant Journal</i> 16:581-589 (1998).						
	Gustin et al., "MAP Kinase Pathways in the Yeast <i>Saccharomyces cerevisiae</i> ," <i>Microbiol. Mol. Biol. Rev.</i> 62:1264-1300 (1998).						
	Hackett et al., "A Tomato MAP Kinase Kinase Gene (Accession No. AJ000728) Differentially Regulated During Fruit Development, Leaf Senescence and Wounding," <i>Plant Gene Register PGR98-151, Plant Physiol.</i> 117:1526 (1998).						
	Hagen et al., "Auxin-Induced Expression of the Soybean GH3 Promoter in Transgenic Tobacco Plants," <i>Plant Mol. Biol.</i> 17:567-579 (1991).						
	Hardtke and Berleth, "The <i>Arabidopsis</i> Gene MONOPTEROS Encodes a Transcription Factor Mediating Embryo Axis Formation and Vascular Development," <i>EMBO J.</i> 17:1405-1411 (1998).						
	Harmon, "The Calcium Connection," <i>Trends in Plant Science</i> 2:121-122 (1997).						
	Hatsuyama et al., "Direct Transfer of Plasmid DNA from Intact Yeast Spheroplasts into Plant Protoplasts," <i>Plant Cell Physiol.</i> 35:93-98 (1994).						
	Herskowitz, "MAP Kinase Pathways in Yeast: For Mating and More," <i>Cell</i> 80:187-197 (1995).						
	Hirt, "Multiple Roles of MAP Kinases in Plant Signal Transduction," <i>Trends in Plant Science</i> 2:11-15 (1997).						
	Holmberg and Bülow, "Improving Stress Tolerance in Plants by Gene Transfer," <i>Trends in Plant Science</i> 3:61-66 (1998).						
	Holmström et al., "Drought Tolerance in Tobacco," <i>Nature</i> 379:683-684 (1996).						
	Hughes et al., "Complementation of <i>byr1</i> in Fission Yeast by Mammalian MAP Kinase Kinase Requires Coexpression of Raf Kinase," <i>Nature</i> 364:349-352 (1993).						
EXAMINER				DATE CONSIDERED			

EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with the next communication to applicant.

RECEIVED

<p>SUBSTITUTE FORM PTO-1449 (MODIFIED)</p> <p>O P E R A T I O N S C E N T E R J C 1 3 U. S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE</p> <p>DEC 26 2002 (37 C.F.R. § 1.98(b))</p>				Attorney Docket No. 00786/389002	Serial No. 09/848,806	Applicant Jen Sheen	Filing Date May 4, 2001
				Group 1638	IDS Filed December 20, 2002		
U.S. PATENTS							
Examiner's Initials	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date (If Appropriate)	
FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION							
Examiner's Initials	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation (Yes/No)	
OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PLACE OF PUBLICATION)							
	Ichimura et al., "Isolation of ATMEKK1 (a MAP Kinase Kinase Kinase)-Interacting Proteins and Analysis of a MAP Kinase Cascade in Arabidopsis," <i>Biochem. Biophys. Res. Commun.</i> 253:532-543 (1998).						
	Ingram and Bartels "The Molecular Basis of Dehydration Tolerance in Plants," <i>Annu. Rev. Plant Physiol. Plant Mol. Biol.</i> 47:377-403 (1996).						
	Inzé and Van Montagu, "Oxidative Stress in Plants," <i>Current Opinion in Biotechnology</i> 6:153-158 (1995).						
	Ishitani et al., "Genetic Analysis of Osmotic and Cold Stress Signal Transduction in Arabidopsis: Interactions and Convergence of Abscisic Acid-Dependent and Abscisic Acid-Independent Pathways," <i>The Plant Cell</i> 9:1935-1949 (1997).						
	Ishizaki-Nishizawa et al., "Low-Temperature Resistance of Higher Plants Is Significantly Enhanced by a Nonspecific Cyanobacterial Desaturase," <i>Nat. Biotechnol.</i> 14:1003-1006 (1996).						
	Ito et al., "NPK15, a Tobacco Protein-Serine/Threonine Kinase with a Single Hydrophobic Region Near the Amino-Terminus," <i>Mol. Gen. Genet.</i> 245:1-10 (1994).						
	Jaglo-Ottosen et al., "Arabidopsis CBF1 Overexpression Induces COR Genes and Enhances Freezing Tolerance," <i>Science</i> 280:104-106 (1998).						
	Jonak et al., "MAP Kinases in Plant Signal Transduction," <i>Cell. Mol. Life Sci.</i> 55:204-213 (1999).						
	Jouannic et al., "Plant MAP Kinase Kinase Kinases Structure, Classification and Evolution," <i>Gene</i> 233:1-11 (1999).						
	Kapiloff et al., "Calcium/CaM-Dependent Protein Kinase Mediates a Pathway for Transcriptional Regulation," <i>Proc. Natl. Acad. Sci. USA</i> 88:3710-3714 (1991).						
	Karpinski et al., "Systemic Signaling and Acclimation in Response to Excess Excitation Energy in Arabidopsis," <i>Science</i> 284:654-657 (1999).						
	Kato et al., "Bmk1/Erk5 Is Required for Cell Proliferation Induced by Epidermal Growth Factor," <i>Nature</i> 395:713-716 (1998).						
	Key, "Modulation of Gene Expression by Auxin," <i>Bioessays</i> 11:52-58 (1989).						
	Kieber et al., "CTR1, a Negative Regulator of the Ethylene Response Pathway in Arabidopsis, Encodes a Member of the Raf Family of Protein Kinases," <i>Cell</i> 72:427-441 (1993).						
	Kishor et al., "Overexpression of Δ^1 -Pyrroline-5-Carboxylate Synthetase Increases Proline Production and Confers Osmotolerance in Transgenic Plants," <i>Plant Physiol.</i> 108:1387-1394 (1995).						
EXAMINER				DATE CONSIDERED			

EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with the next communication to applicant.

RECEIVED
DEC 31 2002
TECH CENTER 1600/2800

SUBSTITUTE FORM PTO-1449 (MODIFIED)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		Attorney Docket No.	00786/389002
				Serial No.	09/848,806
				Applicant	Jen Sheen
O P F DEC 26 2002 JC13 P A T E N T & T R A D E M A R K O F F I C E		INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)		Filing Date	May 4, 2001
				Group	1638
				IDS Filed	December 20, 2002
U.S. PATENTS					
Examiner's Initials	Patent Number	Issue Date	Patentee	Class	Subclass
FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION					
Examiner's Initials	Document Number	Publication Date	Country or Patent Office	Class	Subclass
OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PLACE OF PUBLICATION)					
Klimczak et al., "Multiple Isoforms of Arabidopsis Casein Kinase I Combine Conserved Catalytic Domains with Variable Carboxyl-Terminal Extensions," <i>Plant Physiol.</i> , 109:687-696 (1995).					
Kovtun et al., "Suppression of Auxin Signal Transduction by a MAPK Cascade in Higher Plants," <i>Nature</i> 395:716-720 (1998).					
Kovtun et al., "Functional Analysis of Oxidative Stress-Activated Mitogen-Activated Protein Kinase Cascade in Plants," <i>Proc. Natl. Acad. Sci. USA</i> 97:2940-2945 (2000).					
Kyriakis and Avruch, "Sounding the Alarm: Protein Kinase Cascades Activated by Stress and Inflammation," <i>The Journal of Biological Chemistry</i> 271:24313-24316 (1996).					
Lamb and Dixon, "The Oxidative Burst in Plant Disease Resistance," <i>Annu. Rev. Plant Physiol. Plant Mol. Biol.</i> 48:251-275 (1997).					
Landry and Huot, "Regulation of Actin Dynamics by Stress-Activated Protein Kinase 2 (SAPK2)-Dependent Phosphorylation of Heat-Shock Protein of 27 kDa (Hsp27)," <i>Biochem. Soc. Symp.</i> 64:79-89 (1999).					
Lavoie et al., "Cyclin D1 Expression Is Regulated Positively by the p42/p44 ^{MAPK} and Negatively by the p38/HOG ^{MAPK} Pathway," <i>J. Biol. Chem.</i> 271:20608-20616 (1996).					
Lee et al., "Derepression of the Activity of Genetically Engineered Heat Shock Factor Causes Constitutive Synthesis of Heat Shock Proteins and Increased Thermotolerance in Transgenic Arabidopsis," <i>The Plant Journal</i> 8:603-612 (1995).					
Leung et al., "Arabidopsis ABA Response Gene <i>ABI1</i> : Features of a Calcium-Modulated Protein Phosphatase," <i>Science</i> 264:1448-1452 (1994).					
Leyser, "Auxin Signalling: Protein Stability as a Versatile Control Target," <i>Curr. Biol.</i> 8:R305-R307 (1998).					
Lilius et al., "Enhanced NaCl Stress Tolerance in Transgenic Tobacco Expressing Bacterial Choline Dehydrogenase," <i>Bio/Technology</i> 14:177-180 (1996).					
Lin et al., "Molecular Cloning of a Brain-Specific Calcium/Calmodulin-Dependent Protein Kinase," <i>Proc. Natl. Acad. Sci. USA</i> 84:5962-5966 (1987).					
Lin et al., "5' Proximal Regions of Arabidopsis Nitrate Reductase Genes Direct Nitrate-Induced Transcription in Transgenic Tobacco," <i>Plant Physiol.</i> 106:477-484 (1994).					
Liu et al., "Two Transcription Factors, DREB1 and DREB2, with an EREBP/AP2 DNA Binding Domain Separate Two Cellular Signal Transduction Pathways in Drought- and Low-Temperature-Responsive Gene Expression, Respectively, in Arabidopsis," <i>Plant Cell</i> 10:1391-1406 (1998).					
Liu et al., "Soybean GH3 Promoter Contains Multiple Auxin-Inducible Elements," <i>Plant Cell</i> 6:645-657 (1994).					
EXAMINER	DATE CONSIDERED				
EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with the next communication to applicant.					

RECEIVED

DEC 31 2002

TECH CENTER 1600/2900

Sheet 6 of 11

SUBSTITUTE FORM PTO-1449 (MODIFIED)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	Attorney Docket No. 00786/389002
O F F I C E DEC 26 2002 INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary) (37 C.F.R. § 1.98(b))		Serial No. 09/848,806
		Applicant Jen Sheen
		Filing Date May 4, 2001
		Group 1638
		IDS Filed December 20, 2002

U.S. PATENTS

Examiner's Initials	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date (If Appropriate)

FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION

Examiner's Initials	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation (Yes/No)

OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PLACE OF PUBLICATION)

Machida et al., "Progress in Studies of Plant Homologs of Mitogen-Activated Protein (MAP) Kinase and Potential Upstream Components in Kinase Cascades," <i>Critical Reviews in Plant Sciences</i> 16:481-496 (1997).
Marrs, "Characterization of Two Maize HSP90 Heat Shock Protein Genes: Expression During Heat Shock, Embryogenesis, and Pollen Development," <i>Developmental Genetics</i> 14:27-41 (1993).
Marrs, "The Functions and Regulation of Glutathione S-Transferases in Plants," <i>Annu. Rev. Plant Physiol. Plant Mol. Biol.</i> 47:127-158 (1996).
Martin et al. "Map-Based Cloning of a Protein Kinase Gene Conferring Disease Resistance in Tomato," <i>Science</i> 262:1432-1436 (1993).
Michalczuk et al., "Auxin Levels at Different Stages of Carrot Somatic Embryogenesis," <i>Phytochemistry</i> 31:1097-1103 (1992).
Misra-Press et al., "A Novel Mitogen-Activated Protein Kinase Phosphatase," <i>The Journal of Biological Chemistry</i> 270:14587-14596 (1995).
Mizoguchi et al., "Characterization of Two cDNAs that Encode MAP Kinase Homologues in <i>Arabidopsis thaliana</i> and Analysis of the Possible Role of Auxin in Activating such Kinase Activities in Cultured Cells," <i>The Plant Journal</i> 5:111-122 (1994).
Mizoguchi et al., "Environmental Stress Response in Plants: The Role of Mitogen-Activated Protein Kinases," <i>TIBTECH</i> 15:15-19 (1997).
Mizoguchi et al., "A Gene Encoding a Mitogen-Activated Protein Kinase Kinase Is Induced Simultaneously with Genes for a Mitogen-Activated Protein Kinase and an S6 Ribosomal Protein Kinase by Touch, Cold, and Water Stress in <i>Arabidopsis thaliana</i> ," <i>Proc. Natl. Acad. Sci. USA</i> 93:765-769 (1996).
Molnár et al., "Cdc42Hs, but not Rac1, Inhibits Serum-Stimulated Cell Cycle Progression at G ₁ /S through a Mechanism Requiring p38/RK," <i>J. Biol. Chem.</i> 272:13229-13235 (1997).
Mordhorst et al., "Somatic Embryogenesis in <i>Arabidopsis thaliana</i> Is Facilitated by Mutations in Genes Repressing Meristematic Cell Divisions," <i>Genetics</i> 149:549-563 (1998).
Morimoto, "Regulation of the Heat Shock Transcriptional Response: Cross Talk between a Family of Heat Shock Factors, Molecular Chaperones, and Negative Regulators," <i>Genes Dev.</i> 12:3788-3796 (1998).
Morimoto and Santoro, "Stress-Inducible Responses and Heat Shock Proteins: New Pharmacologic Targets for Cytoprotection," <i>Nat. Biotechnol.</i> 16:833-838 (1998).

EXAMINER	DATE CONSIDERED
EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with the next communication to applicant.	

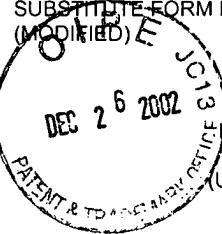
RECEIVED

TECH CENTER 1600/2900

DEC 31 2002

Sheet 7 of

SUBSTITUTE FORM PTO-1449 (MODIFIED)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		Attorney Docket No.	00786/389002	
		INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)		Serial No.	09/848,806	
				Applicant	Jen Sheen	
				Filing Date	May 4, 2001	
				Group	1638	
				IDS Filed	December 20, 2002	
U.S. PATENTS						
Examiner's Initials	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date (If Appropriate)
FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION						
Examiner's Initials	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation (Yes/No)
OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PLACE OF PUBLICATION)						
	Muda et al., "MKP-3, a Novel Cytosolic Protein-Tyrosine Phosphatase that Exemplifies a New Class of Mitogen-Activated Protein Kinase Phosphatase," <i>The Journal of Biological Chemistry</i> 271:4319-4326 (1996).					
	Muda et al., "Molecular Cloning and Functional Characterization of a Novel Mitogen-Activated Protein Kinase Phosphatase, MKP-4," <i>The Journal of Biological Chemistry</i> 272:5141-5151 (1997).					
	Murata et al., "Genetically Engineered Alteration in the Chilling Sensitivity of Plants," <i>Nature</i> 356:710-713 (1992).					
	Nakashima et al., "The Expression Pattern of the Gene for NPK1 Protein Kinase Related to Mitogen-Activated Protein Kinase Kinase (MAPKK) in a Tobacco Plant: Correlation with Cell Proliferation," <i>Plant Cell Physiol.</i> 39:690-700 (1998).					
	Neuhau et al., "Phytochrome-Regulated Repression of Gene Expression Requires Calcium and cGMP," <i>The EMBO Journal</i> 16:2554-2564 (1997).					
	Nishihama et al., "Possible Involvement of Differential Splicing in Regulation of the Activity of Arabidopsis ANP1 that Is Related to Mitogen-Activated Protein Kinase Kinases (MAPKKs)," <i>The Plant Journal</i> 12:39-48 (1997).					
	Noctor and Foyer, "Ascorbate and Glutathione: Keeping Active Oxygen Under Control," <i>Annu. Rev. Plant Physiol. Plant Mol. Biol.</i> 49:249-279 (1998).					
	Nuccio et al., "Metabolic Engineering of Plants for Osmotic Stress Resistance," <i>Current Opinion in Plant Biology</i> 2:128-134 (1999).					
	Pardo et al., "Stress Signaling through Ca ²⁺ /Calmodulin-Dependent Protein Phosphatase Calcineurin Mediates Salt Adaptation in Plants," <i>Proc. Natl. Acad. Sci. USA</i> 95:9681-9686 (1998).					
	Pei et al., "Role of Farnesyltransferase in ABA Regulation of Guard Cell Anion Channels and Plant Water Loss," <i>Science</i> 282:287-290 (1998).					
	Posas and Saito, "Activation of the Yeast SSK2 MAP Kinase Kinase by the SSK1 Two-Component Response Regulator," <i>EMBO J.</i> 17:1385-1394 (1998).					
	Potts et al., "A Protein-Tyrosine/Serine Phosphatase Encoded by the Genome of the Cyanobacterium <i>Nostoc commune</i> UTEX 584," <i>The Journal of Biological Chemistry</i> 268:7632-7635 (1993).					
	Prändl et al., "HSF3, a New Heat Shock Factor from <i>Arabidopsis thaliana</i> , Derepresses the Heat Shock Response and Confers Thermotolerance when Overexpressed in Transgenic Plants," <i>Mol. Gen. Genet.</i> 258:269-278 (1998).					
	Prasad, "Mechanisms of Chilling-Induced Oxidative Stress Injury and Tolerance in Developing Maize Seedlings: Changes in Antioxidant System, Oxidation of Proteins and Lipids, and Protease Activities," <i>The Plant Journal</i> 10:1017-1026 (1996).					
	Reichheld et al., "Specific Checkpoints Regulate Plant Cell Cycle Progression in Response to Oxidative Stress," <i>The Plant Journal</i> 17:647-656 (1999).					
EXAMINER			DATE CONSIDERED			
EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with the next communication to applicant.						



RECEIVED

DEC 31 2002

TECH CENTER 1600/2900

Sheet 8 of 11

SUBSTITUTE FORM PTO-1449 (MODIFIED)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		Attorney Docket No.	00786/389002		
		INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)		Serial No.	09/848,806		
		(37 C.F.R. § 1.98(b))		Applicant	Jen Sheen		
				Filing Date	May 4, 2001		
				Group	1638		
				IDS Filed	December 20, 2002		
U.S. PATENTS							
Examiner's Initials	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date (If Appropriate)	
FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION							
Examiner's Initials	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation (Yes/No)	
OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PLACE OF PUBLICATION)							
	Ribnický et al., "The Effects of Exogenous Auxins on Endogenous Indole-3-Acetic Acid Metabolism, The Implications for Carrot Somatic Embryogenesis" <i>Plant Physiol.</i> 112:549-558 (1996).						
	Riely and Martin, "Ancient Origin of Pathogen Recognition Specificity Conferred by the Tomato Disease Resistance Gene <i>Pto</i> ," <i>Proc. Natl. Acad. Sci. USA</i> 98:2059-2064 (2001).						
	Roxas et al., "Overexpression of Glutathione S-Transferase/Glutathione Peroxidase Enhances the Growth of Transgenic Tobacco Seedlings During Stress," <i>Nature Biotechnology</i> 15:988-991 (1997).						
	Saijo et al., "cDNA Cloning and Prokaryotic Expression of Maize Calcium-Dependent Protein Kinases," <i>Biochimica et Biophysica Acta</i> 1350:109-114 (1997).						
	Saijo et al., "Over-Expression of a Single Ca^{2+} -Dependent Protein Kinase Confers Both Cold and Salt/Drought Tolerance on Rice Plants," <i>The Plant Journal</i> 23:319-327 (2000).						
	Saitoh et al., "Mammalian Thioredoxin Is a Direct Inhibitor of Apoptosis Signal-Regulating Kinase (ASK) 1," <i>EMBO J.</i> 17:2596-2606 (1998).						
	Schraudner et al., "Ozone-Induced Oxidative Burst in the Ozone Biomonitor Plant, Tobacco Bel W3," <i>The Plant Journal</i> 16:235-245 (1998).						
	Sen Gupta et al., "Increased Resistance to Oxidative Stress in Transgenic Plants that Overexpress Choroplastic Cu/Zn Superoxide Dismutase," <i>Proc. Natl. Acad. Sci. USA</i> 90:1629-1633 (1993).						
	Seo et al., "Tobacco MAP Kinase: A Possible Mediator in Wound Signal Transduction Pathways," <i>Science</i> 270:1988-1992 (1995).						
	Sheen, "Protein Phosphatase Activity Is Required for Light-Inducible Gene Expression in Maize," <i>The EMBO J.</i> 12:3497-3505 (1993).						
	Sheen et al., "Green-Fluorescent Protein as a New Vital Marker in Plant Cells," <i>The Plant Journal</i> 8:777-784 (1995).						
	Sheen, " Ca^{2+} -Dependent Protein Kinases and Stress Signal Transduction in Plants," <i>Science</i> 274:1900-1902 (1996).						
	Sheen, "Mutational Analysis of Protein Phosphatase 2C Involved in Abscisic Acid Signal Transduction in Higher Plants," <i>Proc. Natl. Acad. Sci. USA</i> 95:975-980 (1998).						
	Shen et al., "Modular Nature of Abscisic Acid (ABA) Response Complexes: Composite Promoter Units that Are Necessary and Sufficient for ABA Induction of Gene Expression in Barley," <i>The Plant Cell</i> 8:1107-1119 (1996).						
	Shibuya et al., "TAB1: An Activator of the TAK1 MAPKKK in TGF- β Signal Transduction," <i>Science</i> 272:1179-1182 (1996).						
	Sitbon and Perrot-Rechenmann, "Expression of Auxin-Regulated Genes," <i>Physiologica Plantarum</i> 100:443-455 (1997).						
EXAMINER				DATE CONSIDERED			
EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with the next communication to applicant.							

DEC 31 2002

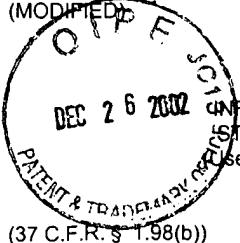
RECEIVED
TECH CENTER 1600/2900

SUBSTITUTE FORM PTO-1449 (MODIFIED)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		Attorney Docket No.	00786/389002		
				Serial No.	09/848,806		
				Applicant	Jen Sheen		
				Filing Date	May 4, 2001		
				Group	1638		
				IDS Filed	December 20, 2002		
U.S. PATENTS							
Examiner's Initials	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date (If Appropriate)	
FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION							
Examiner's Initials	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation (Yes/No)	
OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PLACE OF PUBLICATION)							
	Skriver and Mundy, "Gene Expression in Response to Abscisic Acid and Osmotic Stress," <i>The Plant Cell</i> 2:503-512 (1990).						
	Smith and Walker, "Plant Protein Phosphatases," <i>Annu. Rev. Plant Physiol. Plant Mol. Biol.</i> 47:101-125 (1996).						
	Song et al., "A Receptor Kinase-Like Protein Encoded by the Rice Disease Resistance Gene, Xa21," <i>Science</i> 270:1804-1806 (1995).						
	Storozhenko et al., "The Heat-Shock Element Is a Functional Component of the Arabidopsis APX1 Gene Promoter," <i>Plant Physiol.</i> 118:1005-1014 (1998).						
	Sugiura et al., "pmp1 ⁺ , a Suppressor of Calcineurin Deficiency, Encodes a Novel MAP Kinase Phosphatase in Fission Yeast," <i>The EMBO J.</i> 17:140-148 (1998).						
	Sun and Tonks, "The Coordinated Action of Protein Tyrosine Phosphatases and Kinases in Cell Signaling," <i>TIBS</i> 19:480-485 (1994).						
	Sun et al., "MKP-1 (3CH134), an Immediate Early Gene Product, Is a Dual Specificity Phosphatase that Dephosphorylates MAP Kinase <i>in vivo</i> ," <i>Cell</i> 75:487-493 (1993).						
	Sun et al., "Inhibition of Ras-Induced DNA Synthesis by Expression of the Phosphatase MKP-1," <i>Science</i> 266:285-288 (1994).						
	Takahashi and Komeda, "Characterization of Two Genes Encoding Small Heat-Shock Proteins in <i>Arabidopsis thaliana</i> ," <i>Mol. Gen. Genet.</i> 219:365-372 (1989).						
	Takahashi et al., "Location of the Cis-Acting Auxin-Responsive Region in the Promoter of the <i>par</i> Gene from Tobacco Mesophyll Protoplasts," <i>Proc. Natl. Acad. Sci. USA</i> 87:8013-8016 (1990).						
	Takahashi et al., "The <i>Arabidopsis HSP18.2</i> Promoter/GUS Gene Fusion in Transgenic <i>Arabidopsis</i> Plants: A Powerful Tool for the Isolation of Regulatory Mutants of the Heat-Shock Response," <i>The Plant Journal</i> 2:751-761 (1992).						
	Takenaka et al., "Activation of the Protein Kinase p38 in the Spindle Assembly Checkpoint and Mitotic Arrest," <i>Science</i> 280:599-602 (1998).						
	Tarczynski et al., "Expression of a Bacterial <i>mttD</i> Gene in Transgenic Tobacco Leads to Production and Accumulation of Mannitol," <i>Proc. Natl. Acad. USA</i> 89:2600-2604 (1992).						
	Tarczynski et al., "Stress Protection of Transgenic Tobacco by Production of the Osmolyte Mannitol," <i>Science</i> 259:508-510 (1993).						
EXAMINER			DATE CONSIDERED				
EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with the next communication to applicant.							

TECH CENTER 1600/2000

DEC 31 2002

RECEIVED

SUBSTITUTE FORM PTO-1449
(MODIFIED)U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE


INFORMATION DISCLOSURE
STATEMENT BY APPLICANT
(use several sheets if necessary)
(37 C.F.R. § 1.98(b))

Attorney Docket No. 00786/389002
Serial No. 09/848,806
Applicant Jen Sheen
Filing Date May 4, 2001
Group 1638
IDS Filed December 20, 2002

U.S. PATENTS

Examiner's Initials	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date (If Appropriate)

FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION

Examiner's Initials	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation (Yes/No)

OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PLACE OF PUBLICATION)

	Tomos, "Life Without Water," <i>Current Biology</i> 2:594-596 (1992).
	Tonks and Neel, "From Form to Function: Signaling by Protein Tyrosine Phosphatases," <i>Cell</i> 87:365-368 (1996).
	Tuomainen et al., "Ozone Induction of Ethylene Emission in Tomato Plants: Regulation by Differential Accumulation of Transcripts for the Biosynthetic Enzymes," <i>The Plant Journal</i> 12:1151-1162 (1997).
	Ulmasov et al., "The ocs Element in the Soybean GH2/4 Promoter Is Activated by Both Active and Inactive Auxin and Salicylic Acid Analogues," <i>Plant Mol. Biol.</i> 26:1055-1064 (1994).
	Ulmasov et al., "ARF1, a Transcription Factor that Binds to Auxin Response Elements," <i>Science</i> 276:1865-1868 (1997).
	Ulmasov et al., "Aux/IAA Proteins Repress Expression of Reporter Genes Containing Natural and Highly Active Synthetic Auxin Response Elements," <i>The Plant Cell</i> 9:1963-1971 (1997).
	Urao et al., "Two Genes That Encode Ca ²⁺ -Dependent Protein Kinases Are Induced by Drought and High-Salt Stresses in <i>Arabidopsis thaliana</i> ," <i>Mol. Gen. Genet.</i> 244:331-340 (1994).
	Valvekens et al., "Agrobacterium tumefaciens-Mediated Transformation of <i>Arabidopsis thaliana</i> Root Explants by Using Kanamycin Selection," <i>Proc. Natl. Acad. Sci. USA</i> 85:5536-5540 (1988).
	Walbot, "Sources and Consequences of Phenotypic and Genotypic Plasticity in Flowering Plants," <i>Trends in Plant Science</i> 1:27-32 (1996).
	Walden and Lubenow, "Genetic Dissection of Auxin Action: More Questions than Answers?," <i>Trends in Plant Science</i> 1:335-339 (1996).
	Walker and Estelle, "Molecular Mechanisms of Auxin Action," <i>Current Opinion in Plant Biology</i> 1:434-439 (1998).
	Ward et al., "Control of MAP Kinase Activation by the Mitogen-Induced Threonine/Tyrosine Phosphatase PAC1," <i>Nature</i> 367:651-654 (1994).
	Wasserman et al., "Pk92B: a <i>Drosophila melanogaster</i> Protein Kinase that Belongs to the MEKK Family," <i>Gene</i> 169:283-284 (1996).
	Watillon et al., "A Calcium/Calmodulin-Binding Serine/Threonine Protein Kinase Homologous to the Mammalian Type II Calcium/Calmodulin-Dependent Protein Kinase Is Expressed in Plant Cells," <i>Plant Physiology</i> 101:1381-1384 (1993).
	Weigel and Nilsson, "A Developmental Switch Sufficient for Flower Initiation in Diverse Plants," <i>Nature</i> 377:495-500 (1995).

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with the next communication to applicant.

SUBSTITUTE FORM PTO-1449 (MODIFIED)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		Attorney Docket No.	00786/389002	
 INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary) (37 C.F.R. § 1.98(b))				Serial No.	09/848,806	
				Applicant	Jen Sheen	
				Filing Date	May 4, 2001	
				Group	1638	
				IDS Filed	December 20, 2002	
U.S. PATENTS						
Examiner's Initials	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date (If Appropriate)
FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION						
Examiner's Initials	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation (Yes/No)
OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PLACE OF PUBLICATION)						
	Willekens et al., "Catalase Is a Sink for H ₂ O ₂ and Is Indispensable for Stress Defence in C ₃ Plants," <i>EMBO J.</i> 16:4806-4816 (1997).					
	Wishart and Dixon, "Gathering STYX: Phosphatase-Like Form Predicts Functions for Unique Protein-Interaction Domains," <i>TIBS</i> 23:301-306 (1998).					
	Xia et al., "JNKK1 Organizes a MAP Kinase Module through Specific and Sequential Interactions with Upstream and Downstream Components Mediated by its Amino-Terminal Extension," <i>Genes Dev.</i> 12:3369-3381 (1998).					
	Xu et al., "MEKK1 Phosphorylates MEK1 and MEK2 but Does not Cause Activation of Mitogen-Activated Protein Kinase," <i>Proc. Natl. Acad. Sci. USA</i> 92:6808-6812 (1995).					
	Xu et al., "Expression of a Late Embryogenesis Abundant Protein Gene, <i>HVA1</i> , from Barley Confers Tolerance to Water Deficit and Salt Stress in Transgenic Rice," <i>Plant Physiol.</i> 110:249-257 (1996).					
	Xu et al., "Molecular Characterization of a Tyrosine-Specific Protein Phosphatase Encoded by a Stress-Responsive Gene in <i>Arabidopsis</i> ," <i>Plant Cell</i> 10:849-857 (1998).					
	Yamaguchi et al., "Identification of a Member of the MAPKKK Family as a Potential Mediator of TGF-β Signal Transduction," <i>Science</i> 270:2008-2011 (1995).					
	Yuasa et al., "Tumor Necrosis Factor Signaling to Stress-Activated Protein Kinase (SAPK)/Jun NH ₂ -Terminal Kinase (JNK) and p38," <i>J. Biol. Chem.</i> 273:22681-22692 (1998).					
	Zaitsevskaya-Carter and Cooper, "Spm1, a Stress-Activated MAP Kinase that Regulates Morphogenesis in <i>S.pombe</i> ," <i>EMBO J.</i> 16:1318-1331 (1997).					
	Zhang and Klessig, "Salicylic Acid Activates a 48-kD MAP Kinase in Tobacco," <i>Plant Cell</i> 9:809-824 (1997).					
	Zhong et al., "Direct Sensing of Heat and Oxidation by <i>Drosophila</i> Heat Shock Transcription Factor," <i>Mol. Cell</i> 2:101-108 (1998).					
EXAMINER			DATE CONSIDERED			